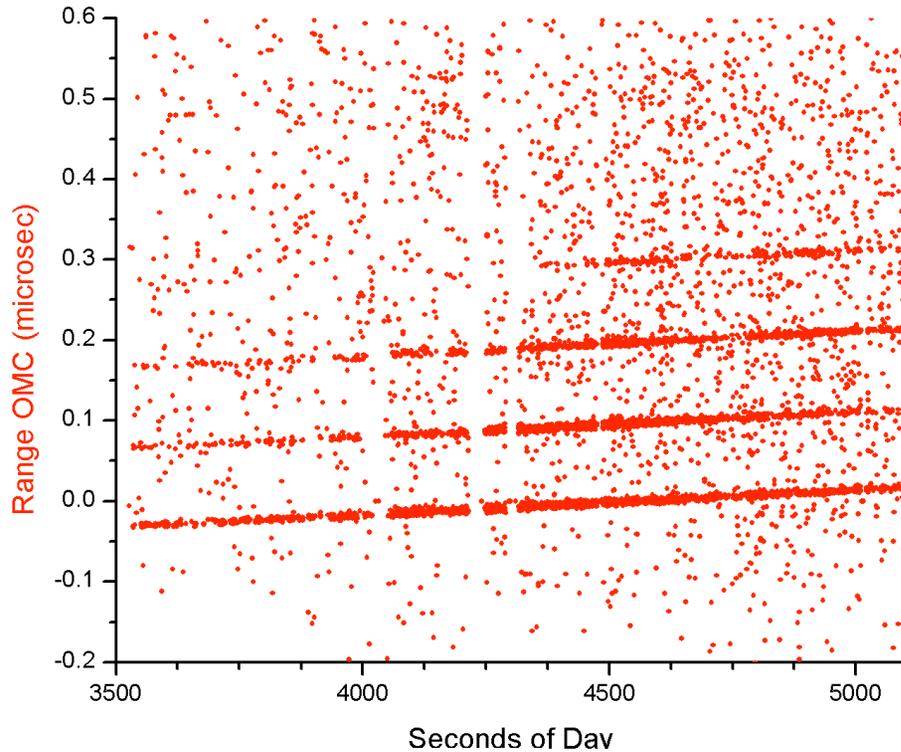


Laser Ranging Ground System

- **Progress**
 - **SLR2000 successfully tracked LEO and LAGEOS satellites with LRO laser (transmitting ~ 5 mJoules) last week. Used observer for aircraft avoidance.**
 - **Problems still with SLR2000 Radar. Expect it operational in next few weeks.**
 - **LR Schedule Format has been defined.**
 - **LRO predictions agreed to within ± 0.5 arcsec of Dave Rowlands (\rightarrow passed our testing). Need full year's worth of predictions from FDF ASAP.**
 - **At Fall ILRS Workshop in France (9/24-9/28) three stations agree to support LR (MLRS in Texas, Matera in Italy, and Zimmerwald in Switzerland). Other stations are interested and may also be able to support. Need Letter of Agreement between ILRS stations and LRO to prevent liability and for stations to show to their funding agencies.**
 - **ILRS Governing Board has approved ranging of its member stations to LRO.**
 - **CPF testing at night revealed interface problems between new and old code. Rework in progress. Expect to retest CPF code by end of October.**
- **Issues & Risks**
 - **None.**

LAGEOS Ranging with new LRO 28Hz laser at SLR2000

SLR2000 OMC PLOT - LAGEOS 10/18/2007



- Plot shows Observed (measured) Minus Calculated (predicted) ranges
- Spacecraft at 6000 km altitude
- Laser energy attenuated to ~ 5 mJ
- Laser divergence ~ 50 microrad
- 4 quadrant Hamamatsu MCP detector
- 100 nsec delay between quadrants
- Honeywell Event Timer with 1.5 psec LSB and ~70 nsec dead time
- Single photon detection
- Telescope pointed ahead to center laser on spacecraft
- Completely open-loop tracking using predictions: no operator intervention, no automated biases

